ADDENDUM TO: CASA GRANDE LANDFILL SCALEHOUSE

Addendum Number 2

Date Issued: April 05, 2012

Extension in bid submittal deadline:

The scheduled deadline for bid submittal and bid opening has been extended to April 24, 2012 at 1:30 p.m. Arizona Time.

The bid documents for the referenced project are modified as follows:

Technical Specification Section
1.0 ABBREVIATED SCOPE OF WORK

Amend 1st Bullet Point: This section shall be amended to clarify that the southern stop light post is to be relocated to location approximately 10 feet south between existing scale and new scalehouse as shown in the sketch attached. Further, any/all utilities/feature or amenity which may interfere the construction of the scalehouse and future scale should be relocated to appropriate location without impacting the operations of the facility. See Figure 3

2.0 SCALE HOUSE

Amend 2.2: This section shall be amended per the attached "Addendum No. 1 to Geotechnical Evaluation for Landfill Scale and Scalehouse Northwest Corner of Interstate 8 and Chuichu Road, Dated December 16, 2011. Casa Grande Arizona" dated March 14, 2012.

Amend 2.10: This section shall be amended to clarify that the finished floor of the scalehouse is intended to be at leat one (1) foot above the elevation of the weighbridge/deck of existing scale or, at least 18" above the finished grade whichever is highest.

Add 2.12: The scalehouse unit would require a masonry skirting wall per International Building Code (IBC) requirements and bid should include the cost of building a reinforced perimeter masonry stem wall on a concrete foundation, design and construction to be provided by the contractor

3.0 UTILITIES

This section shall be amended to clarify that the City is providing the electrical design and specifications on electrical drawings E1 through E4.

Clarifications:

The fiber being pulled into the computer room is 6 pair fiber, the fiber is multimode, 50 micron 10 GIG.
The antenna on the existing scale house will be moved by the City's IT Department.

There are (3) cameras on an IP address that will need to be moved by the contractor.

Increase all electrical equipment at the new scalehouse to be greater than 150 amps (also on Figure 1, page 4 of 4).

Clarifications; Fig 1-Site plan and layouts:

The "misc." items, except fire sprinklers, listed on specifications sheet for scale house are not optional; they must be included in the bid total.

The industrial/commercial grade heavy duty horizontal slider aluminum windows are required to be installed at operating windows at attendant office sidewalls of scale house to withstand high traffic volume services and extended life.

Conceptual Site Plan DWG. No. 2 OF 2: Replace SCALE with FINISHED FLOOR. NGL is Natural Ground Level also Fished Grade.

Clarifications on Questions:

Q. *Data ports, what are you needing; typically the factory provides conduits?*
A. Conduits need to run to all locations that we have identified in Fig. 1 page 4 of 4, all data port conduit needs to feed out of the computer room to the identified locations throughout the building.

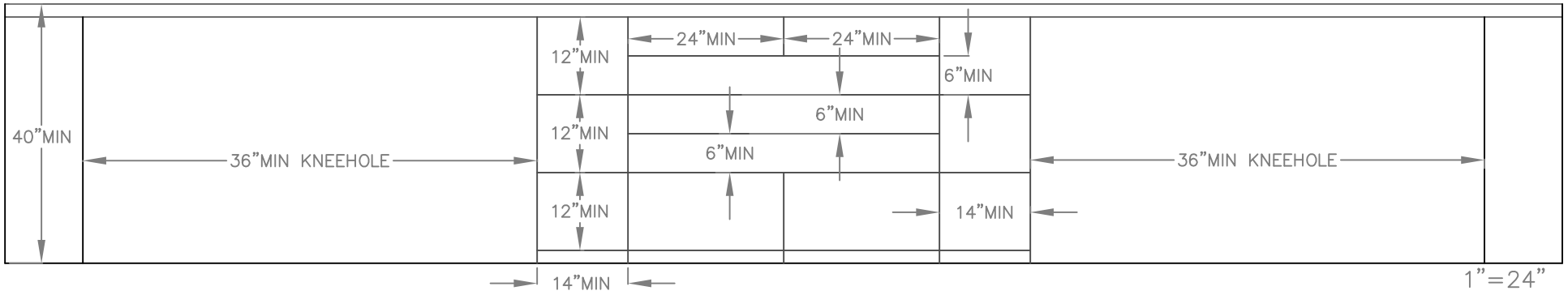
Q. *The bathroom appears to have a third fixture besides the commode and the sink. Other fixtures?*
A. The third fixture is the urinal. In the hallway there's an area notched out for a small sink and coffee pot area.

Q. *Location of fluorescent lights.*
A. All Interior lighting will be 2X4 (2) tube T-8 fluorescent lighting with diverters total of 16 fixtures- (4) Scale Attendant Office, (2) Office, (1) computer room, (1) restroom, (2) Conference room, (4) hallway.

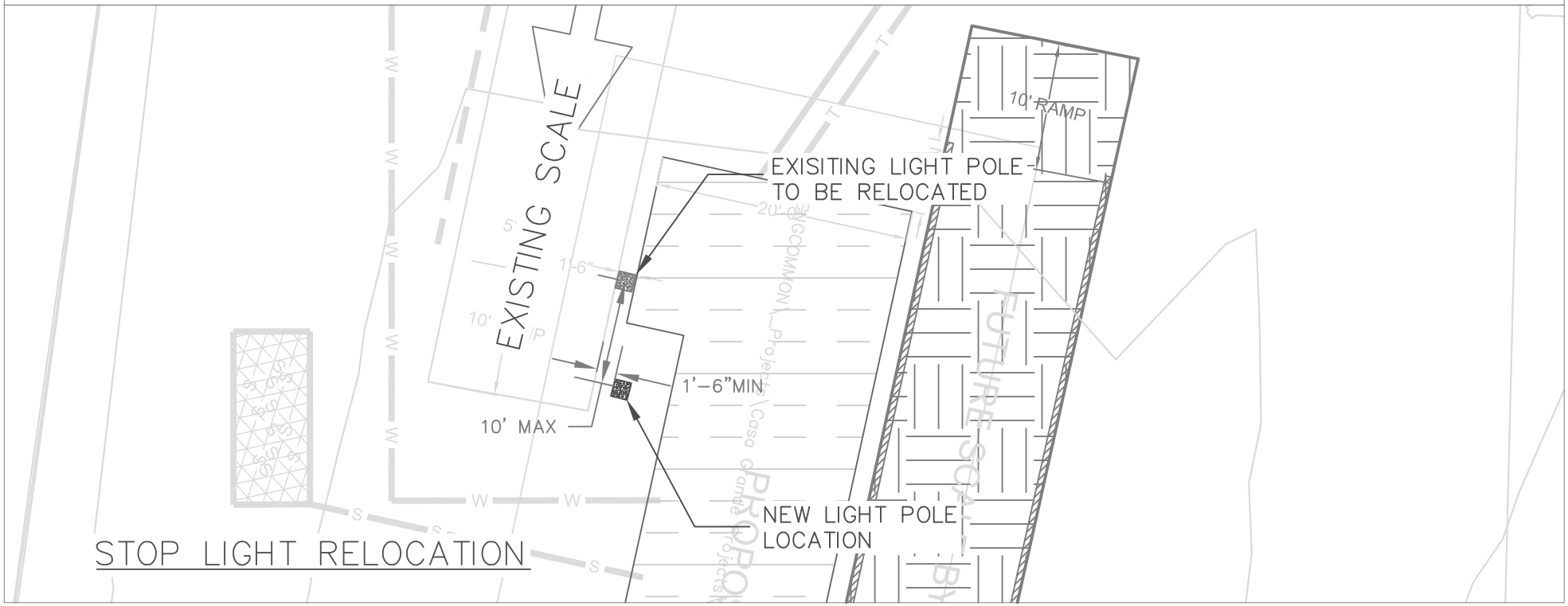
Q. *Office countertops with details, Formica comes in 8ft sheets, seams required need design?*
A. See design Figure 3 (attached) for conceptual design and needs.

Q. *Location of exterior lights*
A. One (1) each on the outside of each door entrance/exit and one (1) each on the outside above the operating windows at the attendant office sidewalls.

FIGURE 3



CONCEPTUAL SCHEME FOR 22" DEEP LAMINATE COUNTERTOP WITH METAL DRAWERS



STOP LIGHT RELOCATION

ELECTRICAL ABBREVIATIONS

A AMP	AMP(S), AMPERE(S)	H, HI	HIGH	OD	OUTSIDE DIAMETER
AC	ALTERNATING CURRENT	H2S	HYDROGEN SULFIDE	OH	OVERHEAD
AFD	ADJUSTABLE FREQUENCY DRIVE	HMI	HUMAN MACHINE INTERFACE	OIT	OPERATOR INTERFACE TERMINAL
AI	ANALOG INPUT	HP	HORSEPOWER	OL	OVERLOAD
AIC	AMPS INTERRUPTING CAPACITY	HS	HYDRAULIC SUPPLY	OT	OVERTORQUE, OIL-TIGHT
AFF	ABOVE FINISHED FLOOR	HSF	FLUORIDE	OWS	OPERATOR WORKSTATION
AFG	ABOVE FINISHED GRADE	HTR	HEATER	PB	PUSHBUTTON, PULLBOX
AHAP	AS HIGH AS POSSIBLE	HTU	HEAT TRACE UNIT	PCP	PUMP/PROCESS CONTROL PANEL
AIC	AMPS INTERRUPTING CAPACITY, SYMM.	HVAC	HEATING, VENTILATION & AIR CONDITIONING	PLC	PROGRAMMABLE LOGIC CONTROLLER
AL	ALUMINUM	HZ	HERTZ (CYCLES PER SECOND)	PMM	POWER MONITORING MODULE
AO	ANALOG OUTPUT	I/O	INPUT/OUTPUT	PNL	PANEL
ARCH	ARCHITECT(URAL)	ICOM	INTERCOM	PP	POWER PANEL
ASYM	ASYMMETRICAL	ID	INSIDE DIAMETER	PR	PAIR
ATS	AUTOMATIC TRANSFER SWITCH	INST	INSTANTANEOUS, INSTRUMENT	PRI	PRIMARY
AUTO	AUTOMATIC	INTLK	INTERLOCK	PT	POTENTIAL TRANSFORMER
AUX	AUXILIARY	IPB	INSTRUMENT PULLBOX	PVC	POLYVINYL CHLORIDE
AWG	AMERICAN WIRE GAUGE	JB	JUNCTION BOX	PW	POTABLE WATER
BC	BARE COPPER	KCMIL	1000 CIRCULAR MILS	PWR	POWER
BLDG	BUILDING	kV	KILOVOLT	RCPT	RECEPTACLE
BOT	BOTTOM	kVA	KILOVOLT-AMPERE	RE STL	REINFORCED STEEL
C	CONDUCTOR, CONDUIT	Kvar	KILOVOLT-AMPERE REACTIVE	REF	REFERENCE
CB	CIRCUIT BREAKER	KW	KILOWATT	REQ'D	REQUIRED
CKT	CIRCUIT	KWH	KILOWATT-HOUR	REQ'TS	REQUIREMENTS
CLG	CEILING	L	LONG, LENGTH	RF	RADIO FREQUENCY
CM	CENTIMETERS	LAN	LOCAL AREA NETWORK	RIO	REMOTE INPUT OUTPUT
CMU	CONCRETE MASONRY UNIT	LCP	LOCAL CONTROL PANEL	RMS	ROOT MEAN SQUARE
CNTL	CONTROL	LCS	LOCAL CONTROL STATION	RTD	RESISTANCE TEMPERATURE DETECTOR
CONC	CONCRETE	LEL	LOWER EXPLOSIVE LEVEL	RTU	REMOTE TERMINAL UNIT
CPT	CONTROL POWER TRANSFORMER	LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT	RVNS	REDUCED VOLTAGE NON-REVERSING
CSI	COMMUNICATION SYSTEM INSTALLER	LT	LONG TIME	RVSS	REDUCED VOLTAGE SOFT STARTER
CT	CURRENT TRANSFORMER	LTG	LIGHTING	RW	RAW WATER
Cu	COPPER	LV	LOW VOLTAGE	SA	SURGE ARRESTOR
CV	CONTROL VALVE	mA	MILLIAMPERE	SBR	SEQUENCING BATCH REACTOR
DB	DIRECT BURIAL	MAG	MAGNETIC	SCR	SILICON CONTROLLED RECTIFIER
DC	DIRECT CURRENT, DATA CABLE	MBJ	MAIN BONDING JUMPER	SD	SMOKE DETECTOR
DCS	DISTRIBUTED CONTROL SYSTEM	MBS	MANUAL BYPASS SWITCH	SEC	SECONDARY
DET	DETAIL	MC	MANUFACTURER CABLE	SES	SERVICE ENTRANCE SECTION
DI	DISCRETE INPUT	MCC	MOTOR CONTROL CENTER	SPEC	SPECIFICATION
DIAG	DIAGRAM	MCP	MOTOR CIRCUIT PROTECTOR	SPKR	SPEAKER
DISC	DISCONNECT	MECH	MECHANICAL	SPC	SPARE CONDUIT
DIST	DISTRIBUTION	MFR(S)	MANUFACTURER(S)	SSI	SECURITY SYSTEM INSTALLER
DO	DISCRETE OUTPUT, DISSOLVED OXYGEN	MGD	MILLION GALLONS PER DAY	SSS	SOLID-STATE SOFT STARTER
DP	DIFFERENTIAL PRESSURE	MGL	MILLIGRAMS PER LITER	ST	SHORT TIME
DS	DIGESTED SLUDGE	MH	MANHOLE	SWBD	SWITCHBOARD
DW	DECANT WATER	MIC	MICROPHONE	SWGR	SWITCHGEAR
DWG	DRAWING	MIN	MINIMUM	SYMM	SYMMETRICAL
(E), (N)	EXISTING / NEW	MISC	MISCELLANEOUS	SYS	SYSTEM
EA	EACH	MLO	MAIN LUG ONLY	TELCO	TELEPHONE COMPANY
EDB	ELECTRICAL DUCTBANK	MM	MILLIMETER	TEMP	TEMPERATURE
ELEC	ELECTRIC, ELECTRICAL	MOV	MOTOR OPERATED VALVE	TSP	TWISTED SHIELDED PAIR
EMH	ELECTRICAL MANHOLE	MPC	MINI-POWER CENTER	TST	TWISTED SHIELDED TRIAD
ENCL	ENCLOSURE, ENCLOSED	MPR	MOTOR PROTECTION RELAY	TTB	TELEPHONE TERMINAL BOARD
EP	EXPLOSION PROOF	MTU	MASTER TELEMETRY UNIT	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EPB	ELECTRICAL PULLBOX	MV, mV	MEDIUM VOLTAGE, MILLIVOLT	TYP	TYPICAL
EQUIP	EQUIPMENT	MVMC	MEDIUM VOLTAGE MOTOR CONTROL	UG U/G	UNDERGROUND
F	FUSE, FUSED	NaOCL	SODIUM HYPOCHLORITE	UPS	UNINTERRUPTIBLE POWER SUPPLY
FDR	FEEDER	NaHSO3	SODIUM BISULFITE	V	VOLT
FeCL2	FERROUS CHLORIDE	N.C.	NORMALLY CLOSED	VA	VOLT-AMPERE
FL	FLUORESCENT	N.O.	NORMALLY OPEN	VAR	VOLT-AMPERE REACTIVE
FLA	FULL LOAD AMPS	N/A	NOT APPLICABLE	VC	VACUUM CONTACTOR
FO	FIBER OPTIC	NEUT, N	NEUTRAL	VFD	VARIABLE FREQUENCY DRIVE
FVNR	FULL VOLTAGE NON-REVERSING	NF	NON-FUSED	W	WATT, WIRE, WIDE
FVR	FULL VOLTAGE REVERSING	NG	NATURAL GAS	WAN	WIDE AREA NETWORK
FW	FINISHED WATER	NIC	NOT IN CONTRACT	WAS	WASTE ACTIVATED SLUDGE
GDR	GROUNDING RESISTOR	No.	NUMBER	W/O	WITHOUT
GEC	GROUNDING ELECTRODE CONDUCTOR	NOM	NOMINAL	WP	WEATHERPROOF
GF	GROUND FAULT	NP	NAMEPLATE	WPWIU	WEATHERPROOF WHILE-IN-USE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NPW	NON-POTABLE WATER	XMTR	TRANSMITTER
GFP	GROUND FAULT PROTECTION	NS	NITROGEN SUPPLY	Z	IMPEDANCE
GND	GROUND	NTS	NOT TO SCALE		
GAL	GALLONS				
GP(D/H/M)	GALLONS PER (DAY/HOUR/MINUTE)				
GRS	GALVANIZED RIGID STEEL				

ELECTRICAL PLAN SYMBOLS

IDENTIFICATION SYMBOLS

- INDICATES KEY NOTE # REFERENCED, (APPLICABLE ONLY TO SHEET WITH NOTE IS FOUND)
- INDICATES BILL OF MATERIAL # REFERENCED, (MAY BE APPLICABLE ACROSS ALL PROJECT SHEETS)
- INDICATES BRIEF INSTRUMENT REFERENCE
- INDICATES MISCELLANEOUS REFERENCE NUMBER OR LETTER (DESCRIBED FURTHER WITHIN PLANSET WHERE APPLICABLE)
- CONDUIT IDENTIFICATION (#### = CONDUIT NUMBER, REFER TO CONDUIT SCHEDULE)

RACEWAYS AND LINETYPES

- EXPOSED CONDUIT
- EXISTING EXPOSED CONDUIT
- UNDERGROUND CONDUIT DUCTBANK
- EXISTING UNDERGROUND CONDUIT DUCTBANK
- CONDUIT STUBUP
- CONDUIT TURNED DOWN
- CONDUIT RUN CONCEALED IN CEILING, FLOOR, OR IN WALLS
- EXISTING CONCEALED CONDUIT
- UTILITY CONDUIT DUCTBANK
- EXISTING UTILITY CONDUIT DUCTBANK
- OHE — UTILITY OVERHEAD ELECTRIC
- OHE — EXISTING UTILITY OVERHEAD ELECTRIC
- G — GROUNDING SYSTEM CONDUCTOR
- CHAIN LINK FENCE
- EXISTING CHAIN LINK FENCE
- HOMERUN

MISCELLANEOUS

- UNDERGROUND BOX
  xx = BOX TYPE/DESIGNATION (I.E. EMH, EPB, IPB)
- SAFETY SWITCH
  xx = DISCONNECT TYPE (I.E. F, NF, CB)
  #A = CURRENT RATING OF SWITCH
- COMBINATION MOTOR STARTER

GROUNDING

- GROUND SYSTEM CONNECTION
- LIGHTNING ROD
- GROUND ROD AND WELL
- GROUND ROD WITHOUT WELL

RECEPTACLES

- SIMPLEX RECEPTACLE
- SWITCH AND SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE WITH SPLIT WIRE
- QUADRAPLEX RECEPTACLE
- SPECIALTY PURPOSE RECEPTACLE
- 480V RECEPTACLE

WHERE,
# = CIRCUIT DESIGNATION
x = DEVICE TYPE DESIGNATION, WHERE
GF = GROUND FAULT CIRCUIT INTERRUPTER
WP = WEATHERPROOF
WPWIU = WP WHILE-IN-USE

SWITCHES

- SINGLE POLE SWITCH
- SINGLE POLE SWITCH WITH MODIFIER

WHERE,
# = CIRCUIT DESIGNATION
x1 = DESIGNATION OF DEVICE SWITCHED (I.E. a, b, c, etc.)
x2 = SWITCH SUBSCRIPT MODIFIER, WHERE
2 = GROUND FAULT CIRCUIT INTERRUPTER
3 = WEATHERPROOF
4 = WP WHILE-IN-USE
K = KEY OPERATED
M = HORSEPOWER RATED MANUAL STARTER
MC = MOMENTARY CONTACT, THREE POSITION
MS = MANUAL (MOTOR) STARTER OR SWITCH
R = RHEOSTAT (DIMMER OR SPEED CONTROL)
F = FLUSH MOUNTED
WP = WEATHERPROOF

ONE LINE DIAGRAM SYMBOLS

- LOW VOLTAGE CIRCUIT BREAKER
  a = BREAKER DESIGNATION
  b = AMPS & TRIP SETTING
  (AT – AMP TRIP)
  (AC – CONTINUOUS RATING)
  c = FRAME SIZE (MFR TO DETERMINE FRAME SIZE UNLESS INDICATED)
  d = BREAKER TYPE
  MCP – MOTOR CIRCUIT PROTECTOR
  SS – SOLID-STATE
  TM – THERMAL MAGNETIC
  e = NUMBER OF POLES
  f = WITHSTAND RATING
- LOW VOLTAGE DISCONNECT SWITCH
  a = DISCONNECT DESIGNATION
  b = AMPS RATING
  c = NUMBER OF POLES
  d = ENCLOSURE RATING (IF MOUNTED IN SEPARATE ENCL) (I.E. NEMA 1, 12, 3R, 4X, 7)
  e = WITHSTAND RATING
- FUSE
  a = AMPS RATING
  b = FUSE TYPE
- MOTOR STARTER
  a = STARTER SIZE
  b = STARTER TYPE (NEMA/IEC)
- OVERLOAD RELAY
  a = OVERLOAD TYPE (I.E. OL, EOL)
- M <UTILITY> POWER METER — UTILITY METER
- HP — MOTOR
  HP = HORSEPOWER RATING

GENERAL NOTES

A. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES.

B. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ADOPTED (OR CURRENT WHERE NONE HAVE BEEN ADOPTED) BUILDING CODES: 2006 IFC, 2006 IEC, 2006 IECC, 2006 IEBC, 2006 IPMC, 2008 NEC, ALL APPLICABLE LOCAL CODES, ORDINANCES AND AMENDMENTS.

C. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER UNDER COMPETENT SUPERVISION.

D. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURER'S NAMES, MODELS AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER PRIOR TO MATERIAL PROCUREMENT.

E. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS CONTRACT AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE.

F. LEAVE THE SITE CLEAN. REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS BEFORE FINAL ACCEPTANCE OF WORK.

G. REFER TO OTHER PLANS OR SPECIFICATIONS AND CONTRACT DOCUMENTS FOR EXACT LOCATION OF EQUIPMENT AND ARCHITECTURAL FEATURES.

H. TYPICAL DETAILS APPLY IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.

I. ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. INSULATION SHALL BE TYPE XHHW OR THWN. NONMETALIC-SHEATHED CABLE WILL NOT BE PERMITTED.

J. ALL WIRING DEVICES AND ELECTRICAL EQUIPMENT SHALL BE COMMERCIAL GRADE.

K. VERIFY EXACT LOCATION, MOUNTING HEIGHT AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN. PROVIDE ALL ASSOCIATED EQUIPMENT FOR PROPER OPERATION AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.

L. PROVIDE GROUND WIRE IN ALL RACEWAYS SIZED PER NEC ARTICLE 250. INSTALL 250-LB PULL CORD IN ALL EMPTY CONDUITS INSTALLED AS PART OF THIS PROJECT.

M. ALL UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC. MINIMUM DEPTH SHALL BE 36",

N. CONDUIT SHALL BE BURIED A MINIMUM OF 36-INCHES BELOW FINISHED GRADE TO TOP OF CONDUIT(S). WHERE CONDUIT STUBS UP OUT OF THE EARTH TO ELECTRICAL EQUIPMENT, THE CONDUIT SWEEP AND CONDUIT LEAVING THE EARTH MUST BE PVC COATED GRS CONDUIT OR GRS CONDUIT WRAPPED WITH 20-MIL RUBBER TAPE HALF-LAPPED TO A THICKNESS OF 40-MILS.

O. ALL CIRCUIT CONDUCTORS, #6 AWG OR SMALLER, SHALL BE "THHN/THWN-2" OR "XHHW" STRANDED COPPER. ALL OTHER CONDUCTORS SHALL BE "XHHW" STRANDED COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 AWG GROUND FOR POWER CIRCUITS.

P. ALL JUNCTION BOXES USED IN THIS PROJECT SHALL BE MARKED WITH PANEL DESIGNATION AND CIRCUIT NUMBERS.

Q. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH CONTRACTORS OF OTHER TRADES FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED PRIOR TO ROUGH-IN.

PUBLIC WORKS DEPARTMENT
3181 N. LEAR AVE
CASA GRANDE, AZ 85122
(520)421-8625
www.casagrandeaz.gov

LANDFILL SCALEHOUSE

CHUICHU ROAD
CASA GRANDE, AZ

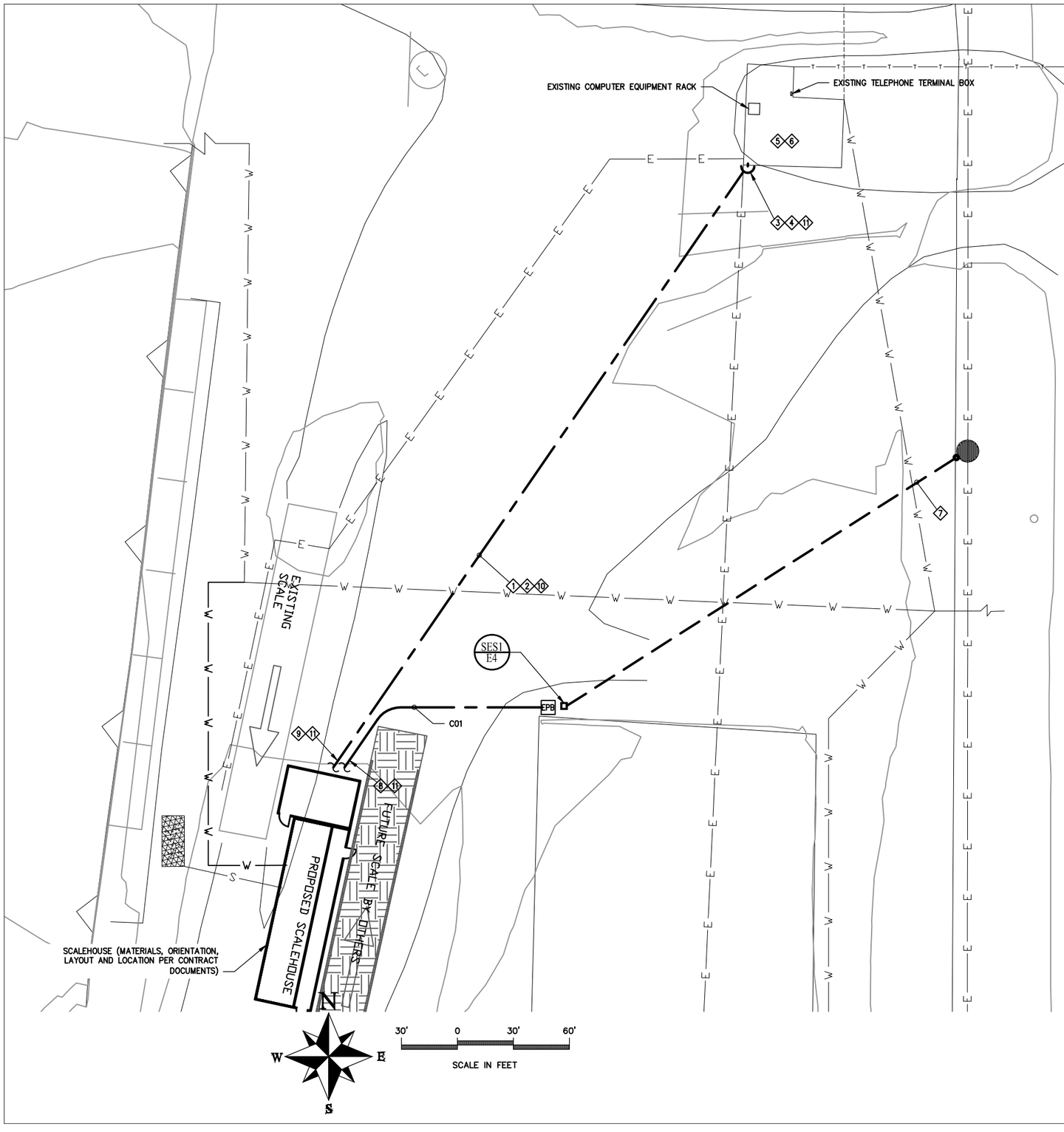
ELECTRICAL COVER DRAWING

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 39548
ZANE E. WILSTERMAN
Date Signed: 04-02-12
STATE OF ARIZONA, U.S.A.
EXPIRES 09-30-2012

CONTROLLED ENERGY ENGINEERS, LLC
21019 S 221ST STREET
QUEEN CREEK, AZ 85142
Phone: 602-576-4161
Contact: ZANE WILSTERMAN, P.E.

PROJECT No.: 10-Jan-2907
DATE: 2012-04-02
SCALE: AS NOTED
DRAWN BY: Z WILSTERMAN
REVISION No.: 1

DWG. NO. E1



GENERAL NOTES

A. REFER TO SHEET E3 FOR SINGLE LINE DIAGRAM.

B. REFER TO SHEET E4 FOR ELECTRICAL DETAILS AND ELEVATIONS.

KEY NOTES

1. INSTALL 25-PAIR TELEPHONE CABLE (PER CONTRACT DOCUMENTS 3.7) IN 2"CONDUIT BETWEEN EXISTING SCALEHOUSE BUILDING AND THE NEW SCALEHOUSE.
2. INSTALL 6-PAIR FO CABLE (PER CONTRACT DOCUMENTS 3.7) IN 2"CONDUIT BETWEEN EXISTING SCALEHOUSE BUILDING AND THE NEW SCALEHOUSE.
3. STUBUP (3) 2" CONDUITS NEXT TO BUILDING (APPROX 12" FROM THE WEST SIDE OF THE BUILDING. EXTEND CONDUITS TO "LB" CONDUIT BODIES AND PENETRATE EXISTING SCALEHOUSE AT +18" ABOVE FINISHED GRADE.
4. CORE DRILL SIDE OF BUILDING FOR (3) 2" CONDUITS. GROUT AROUND CONDUITS FOR WEATHERTIGHT SEAL.
5. CONDUITS SHOULD PENETRATE WALL BY 2-INCHES. CABLES SHALL THEN BE INSTALLED EXPOSED TO THE TELEPHONE BOX (25-PAIR CABLE) AND LOCATION WHERE EXISTING COMPUTER EQUIPMENT RACK ENCLOSURE CURRENTLY RESIDES OR AS DIRECTED BY THE CITY.
6. CABLES SHALL BE ROUTED WITHIN THE CEILING SPACE WHEREVER POSSIBLE. CABLE SHALL NOT BE INSTALLED EXPOSED HORIZONTALLY. ALL HORIZONTAL CABLE RUNS SHALL BE INSTALLED IN THE CEILING SPACE.
7. INSTALL (1) 3" SECONDARY CONDUIT, TRENCH AND BACKFILL PER SCIP REQUIREMENTS. SCIP CONTACT IS MR. ART JOHNSON (520-723-6253 OR art.johnson@bia.gov).
8. EXTEND CONDUIT TO SCALEHOUSE SUBPANEL PER CONTRACT DOCUMENT REQUIREMENTS.
9. EXTEND CONDUITS TO COMPUTER ROOM OR AS DIRECTED BY THE CITY PER CONTRACT DOCUMENT REQUIREMENTS.
10. INSTALL (1) 2" SPARE CONDUIT WITH 250-LB PULL CORD. EXTEND TO COMPUTER ROOM OR AS DIRECTED BY THE CITY.
11. PACK CONDUIT OPENINGS WITHIN THE BUILDING AND SUBPANEL WITH DUCT SEAL.

PUBLIC WORKS DEPARTMENT
3181 N. LEAR AVE
CASA GRANDE, AZ 85122
(520)421-8625
www.casagrandeaz.gov

LANDFILL SCALEHOUSE

CHUICHU ROAD
CASA GRANDE, AZ

ELECTRICAL SITE PLAN

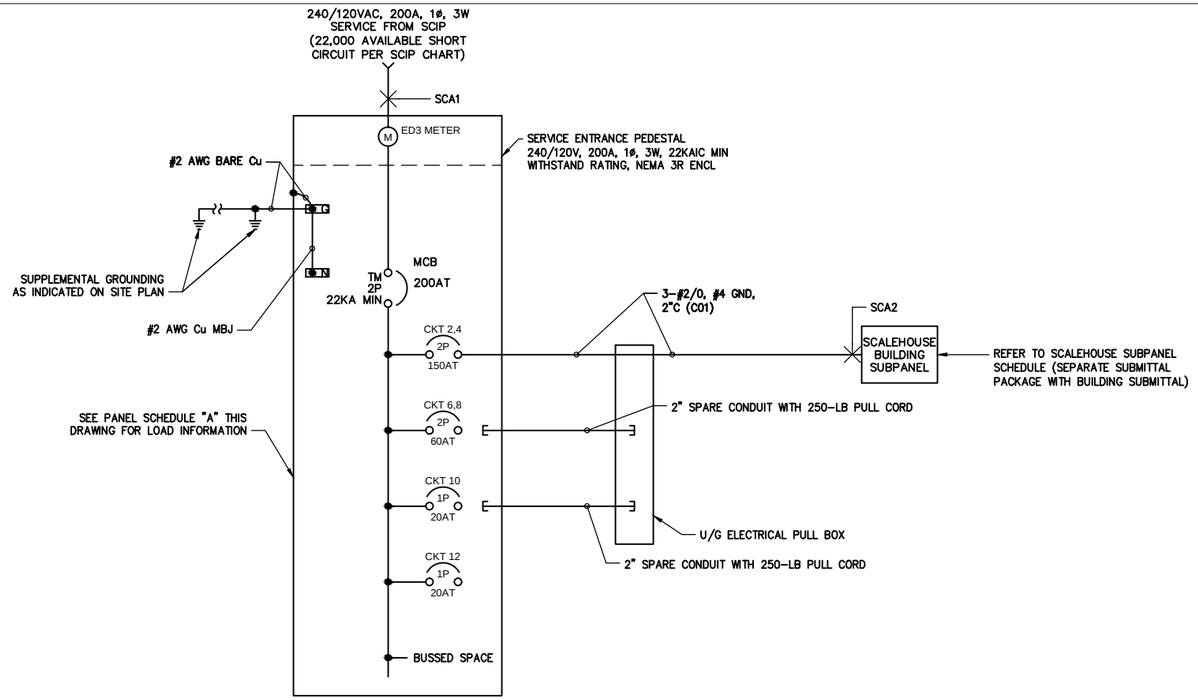
Registered Professional Engineer (Electrical)
CERTIFICATE No.
39548
ZANE E. WILSTERMAN
04-02-12
Date Signed
ARIZONA, U.S.A.
EXPIRES 09-30-2012

PROJECT No.:	10-Jan-2907
DATE:	2012-04-02
SCALE:	AS NOTED
DRAWN BY:	Z WILSTERMAN
REVISION No.:	1

DWG. NO.
E2
2 OF 4

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

CONTROLLED ENERGY ENGINEERS, LLC
21019 S 221ST STREET
QUEEN CREEK, AZ 85142
Phone: 602-576-4161
Contact: ZANE WILSTERMAN, P.E.



SINGLE LINE DIAGRAM

GENERAL NOTES

A. REFER TO SHEET E4 FOR ELECTRICAL DETAILS AND ELEVATIONS.

PANEL: A	VOLTAGE: 120/240V, 1-PH	MAINS: 200A MCB	BUS AMPS: 200
TYPE: BOLT-ON C/B'S	MOUNTING: SERVICE PEDESTAL	MIN AIC: 22,000	

VA LOAD

CIRCUIT DESCRIPTION	BKR	CKT	A	B	CKT	BKR	CIRCUIT DESCRIPTION
MAIN CIRCUIT BREAKER	200	1	14856	–	2	150	SCALEHOUSE SUBPANEL
	2P	3		14856	4	2P	
<SPACE>		5	0		6	60	SPARE BREAKER
<SPACE>		7		0	8	2P	
<SPACE>		9	0		10	20	SPARE BREAKER
<SPACE>		11		0	12	20	SPARE BREAKER
CONNECTED VA PER PHASE			14856	14856	NOTES:		
CONNECTED AMPS PER PHASE			123.8	123.8	"X" DENOTES CONTINUOUS LIGHTING LOAD		
+25% LARGEST MOTOR VA			780	780	"XX" DENOTES LARGEST MOTOR LOAD		
+25% CONTINUOUS LIGHTING LOAD VA			214	214			
DEMAND VA PER PHASE			15850	15850			
TOTAL AMPS PER PHASE			132.1	132.1			

240V, 1 ϕ LOAD CALCULATIONS

LOAD DESCRIPTION	*VA*	*H.P.*	*AMPS*
SCALEHOUSE SUBPANEL: LIGHTS (APPROX 18 @ 80VA/LT)	*1710*	–	*7.1*
SCALEHOUSE SUBPANEL: RECEPTACLES (APPROX 41 @ 180VA/RECEPT)	*7380*	–	*30.8*
SCALEHOUSE SUBPANEL: INSTANT WATER HEATER (APPROX 2 @ 1500VA/IHW	*3000*	–	*12.5*
SCALEHOUSE SUBPANEL: A/C UNIT	*7632*	–	*31.8*
SCALEHOUSE SUBPANEL: A/C UNIT HEATER (10KW)	*10000*	–	*41.7*
			0.0
			0.0
			0.0
		SUBTOTAL =	*123.8*
		+25% OF CONTINUOUS LIGHTING LOADS =	*1.8*
		+25% OF LARGEST MOTOR (26 FLA) =	*6.5*
		MINIMUM SERVICE SIZE =	*132.1*
		SELECTED SERVICE SIZE =	*200A*

1-PHASE SHORT CIRCUIT CALCULATION

$$I_{SC\_RMS} = I_{SC} \times M \quad M = 1/(1+f) \quad f = \frac{2 \times L \times I_{SC}}{C \times n \times E_{L-L}} \quad (XFMR)\ I_{SC\_SEC} = \frac{V_{PRI}}{V_{SEC}} \times M \times I_{SC\_PRI} \quad f = \frac{I_{SC\_PRI} \times V_{PRI} \times 1.732(\%Z)}{100{,}000 \times KVA_{TRANSFORMER}} \quad M = \frac{100}{\%Z}$$

Fault Point	Panel/Transformer Description	Source (Fault Point)	I (Source Current) (amps)	Conduit Type	Cable Type	Wire/Bus Size	"C" Value	E_{L-L} (Volts)	L (Length) (FT)	XFMR KVA	XFMR %Z	f	M
1	SERVICE FROM UTILITY	1	22,000										
2	SCALEHOUSE SUBPANEL	1	9,633	NM	600V	1 SET(S) OF 2/0	11424	240	80	--	--	1.284	0.44
3													
4													
5													

CALL TWO WORKING DAYS
BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

CONTROLLED ENERGY
ENGINEERS, LLC
21019 S 221ST STREET
QUEEN CREEK, AZ 85142
Phone: 602-576-4161
Contact: ZANE WILSTERMAN, P.E.

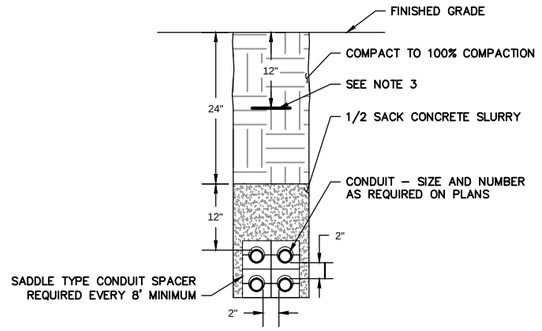
PUBLIC WORKS DEPARTMENT
3181 N. LEAR AVE
CASA GRANDE, AZ 85122
(520)421-8625
www.casagrandeaz.gov

LANDFILL SCALEHOUSE
CHUICHU ROAD
CASA GRANDE, AZ

SINGLE LINE DIAGRAM

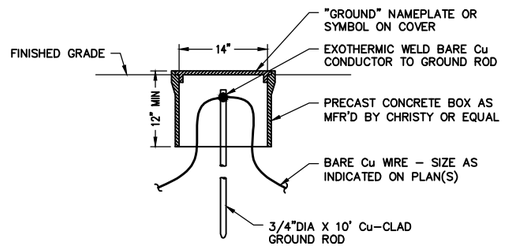
PROJECT No.: 10-Jan-2907
DATE: 2012-04-02
SCALE: AS NOTED
DRAWN BY: Z WILSTERMAN
REVISION No.: 1

DWG. NO.
E3



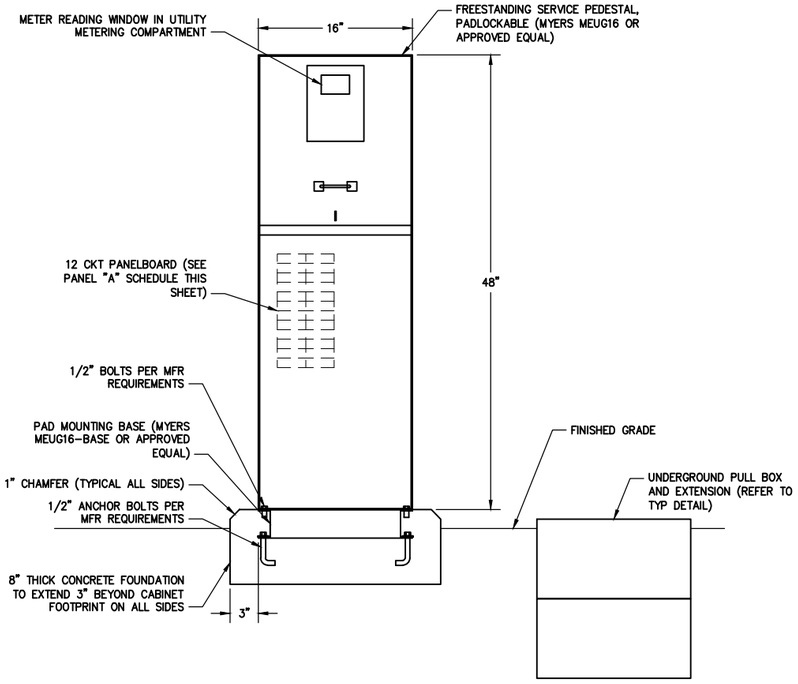
NOTES:
1. NUMBER AND SIZE OF ELECTRICAL DIRECT BURIED RACEWAYS SHALL BE AS INDICATED ON DRAWINGS OR SCHEDULES.
2. DIMENSIONS INDICATED ABOVE ARE MINIMUM REQUIREMENTS.
3. 6" WIDE DETECTABLE PLASTIC MARKER TAPE WITH INSCRIPTION "CAUTION BURIED ELECTRIC LINE BELOW" BLACK LETTERS ON RED BACKGROUND) (IDEAL 42–251).
4. SPARE CONDUIT(S) MUST BE LOCATED ON TOP OF DUCTBANKS.
5. THIS DETAIL APPLIES IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.
6. THIS DETAIL DOES NOT APPLY TO UTILITY DUCTBANKS.
7. SEPARATE POWER CONDUITS FROM CONTROL CONDUITS BY 12–INCHES MINIMUM.

DB1 TYP **DUCTBANK DETAIL – DIRECT BURIED (TYPICAL)**
NTS



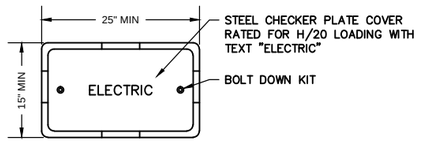
NOTES:
1. COVER SHALL BE STEEL. IF LOCATED IN TRAFFIC AREA, COVER SHALL BE H–20 RATED.
2. DIMENSIONS INDICATED ABOVE ARE MINIMUM REQUIREMENTS.
3. THIS DETAIL APPLIES IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.

GND1 TYP **GROUND ROD AND WELL DETAIL (TYPICAL)**
NTS

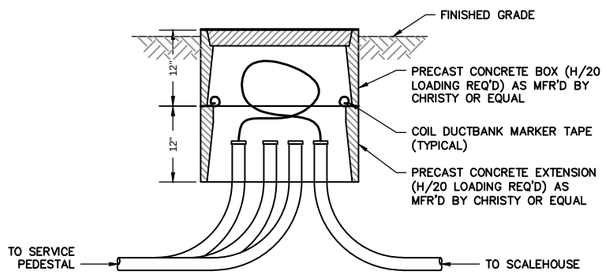


DETAIL NOTES:
1. SERVICE PEDESTAL FRONT SHALL FACE DUE NORTH.

SES1 TYP **SERVICE PEDESTAL DETAIL (TYPICAL)**
NTS



TOP VIEW



SIDE VIEW (SECTION)

NOTES:
1. DIMENSIONS INDICATED ABOVE ARE MINIMUM REQUIREMENTS.
2. THIS DETAIL APPLIES IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.

UPB1 TYP **UNDERGROUND PULL BOX DETAIL (TYPICAL)**
NTS

Registered Professional Engineer (Electrical)
CERTIFICATE No. 39548
ZANE E. WILSTERMAN
Date Signed: 04-02-12
ARIZONA, U.S.A.
EXPIRES 09–30–2012

CALL TWO WORKING DAYS BEFORE YOU DIG
602–263–1100
1–800–STAKE–IT
(OUTSIDE MARICOPA COUNTY)

CONTROLLED ENERGY ENGINEERS, LLC
21019 S 221ST STREET
QUEEN CREEK, AZ 85142
Phone: 602-576-4161
Contact: ZANE WILSTERMAN, P.E.

PUBLIC WORKS DEPARTMENT
3181 N. LEAR AVE
CASA GRANDE, AZ 85122
(520)421–8625
www.casagrandeaz.gov

LANDFILL SCALEHOUSE
CHUICHU ROAD
CASA GRANDE, AZ

ELECTRICAL DETAILS

PROJECT No.: 10–Jan–2907
DATE: 2012–04–02
SCALE: AS NOTED
DRAWN BY: Z WILSTERMAN
REVISION No.: 1

DWG. NO.
E4
4 OF 4